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ChemRisk/Shonka Research Associates, Inc., Document Request Form

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(This section to be completed by subcontractor requesting document)

J Lamb / 1034A

Requestor — Document Center (is requested to provide the following document)

Date of request 8/18/95 Expected receipt of document 9/15/95

Document number none Date of document 1977 - 1978

Title and author (if document is unnumbered)

Environmental Monitoring Progress Reports (8 letters)

⇒ Please copy only the top set of papers that are paper-clipped together

Thanks

(This section to be completed by Document Center)

Date request received 8/24/95

Date submitted to ADC 8/30/95

Date submitted to HSA Coordinator 8/24/95

(This section to be completed by HSA Coordinator)

Date submitted to CICO 8/30/95

Date received from CICO 9/6/95

Date submitted to ChemRisk/Shonka and DOE 9/6/95

(This section to be completed by ChemRisk/Shonka Research Associates, Inc.)

Date document received

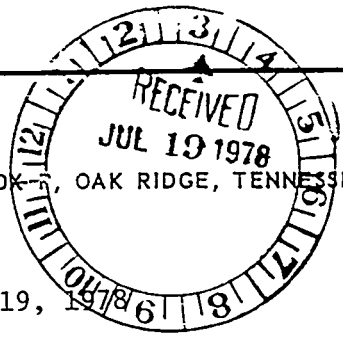
Signature

2528

File

UNION CARBIDE

INTERNAL CORRESPONDENCE



NUCLEAR DIVISION

POST OFFICE BOX [illegible], OAK RIDGE, TENNESSEE 37830

To (Name) R. W. Levin
Division
Location

Date July 19, 1978

Originating Dept. Special Services

Answering letter date

Copy to

M. S. Dill
R. B. Farrar
R. D. Gilmore
C. G. Jones
T. Kwasnoski
J. R. Merriman
M. E. Mitchell
J. H. Pashley
L. J. Peacock
L. A. Smith
S. S. Stief
C. W. Weber
J. C. White
File - NoRC

Subject Meeting to Review Environmental Monitoring Progress

(1) The meeting reviewed the airborne fluoride sampling and analysis program, and agreed that the recent data, obtained by the Analytical Services Department, compared favorably with the Paducah and Goodyear analyses. Detailed studies of the procedure and method of resolution of the ORGDP bias are shown in a letter to T. Kwasnoski from M. S. Dill, dated June 27, 1978. This analytical environmental concern is now successfully completed and ORGDP is in compliance with State air emission limits.

(2) The overall evaluation of possible freon losses to the atmosphere was then discussed. A field survey of K-31 and K-33 has not revealed the expected leaks in sight glasses, piping, or the transfer station and storage tanks. The Analytical Development chemist, T. R. Oldham, has assisted D. J. Tevault in calibration and operation of the field survey instrument. The survey is continuing.

The four freon-in-water RCW monitors have been received and are ready for installation. The Operations Division must now install sampling lines from the headers, and relay lines to the output recorders in the K-32 control room.

A third freon detection program requires detection of cooler leaks while in the K-1401 Test Stand. The infrared method may not be sufficiently sensitive, and a parallel study using helium leak detection is underway.

An "ad hoc" Freon Loss Committee is being established to coordinate Operations, Environmental Management, Engineering, and Technical Services studies.

Prepared by Union Carbide Corporation-Nuclear Division, operating contractor for the U.S. Department of Energy under U.S. Government Contract No. W-7405-eng-26.

(3) The K-1200 stack gas sampling program has been initiated.

(4) The K-1037 stack gas sampling and analysis program has received higher priority; ORGDP now needs to apply for effluent discharge permits and identification of effluents is needed.

(5) The identification of chlorinated organics in both potable and surface waters is needed. On August 11, R. D. Gilmore and M. E. Mitchell will provide water samples for GC-MS analysis by the Analytical Development Group.

(6) In October the Environmental Management Group will begin to submit mineral oil samples to Analytical Development to detect 50 ppb of polychlorinated biphenyls.

The next review session is scheduled for 1:00 p.m., Tuesday, October 10, 1978, in the K-1006 conference room. A reminder notice will be issued in early October.

Joseph H. Stewart, Jr.

J. H. Stewart, Jr.

JHS:pte

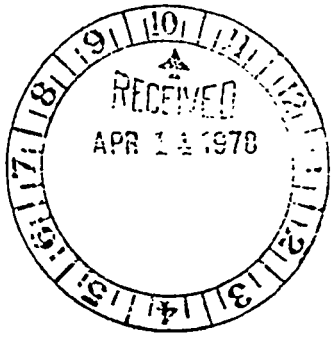
file

UNION CARBIDE

INTERNAL CORRESPONDENCE

NUCLEAR DIVISION

POST OFFICE BOX P, OAK RIDGE, TENNESSEE 37830



To (Name) R. W. Levin
Division
Location K-1004A

Date April 12, 1978

Originating Dept. Special Services

Answering letter date

Copy to
F. N. Bensey, Jr.
C. L. Buskirk
M. S. Dill
R. B. Farrar
R. D. Gilmore
T. Kwasnoski
J. S. McCall
J. R. Merriman
J. G. Million
M. E. Mitchell
J. H. Pashley
L. J. Peacock
L. A. Smith
S. S. Stief
C. W. Weber
J. C. White
S. B. Woodfin
File - NoRC

Subject Meeting to Review Environmental Monitoring Progress

Projects completed since the last meeting include:

1. The K-1037 dust sampling and analysis program. R. D. Gilmore evaluated the data and has now purchased an instrument to provide routine analyses.

2. The quarterly base-line asbestos in surface waters specimens were analyzed and, for the first time, no fibers were found. The low K-25 power level may be a contributing factor.

3. The Hi-Vol air samplers have been installed and are in service.

4. Study of the plant recirculating water system resulted in a decision to purchase the suggested Andco unit, capable of reducing hexavalent chromium to trivalent chromium at the rate of 600 gal of water/min. The unit is to be received in December 1978.

The three-plant comparison of airborne fluoride analysis was discussed in detail by M. S. Dill and T. Kwasnoski. They believe that the reason for the apparent bias in the K-25 measurements has been found, and confirmatory experiments are in progress.

Projects underway are:

1. Install four freon-in-water analyzers in the RCW headers in K-31 and K-33. The analyzers are purchased and are to be received in May. Installation schedules are dependent on Operations Division funding. The associated development of a portable freon detector for locating condenser leakage is complete.

Prepared by Union Carbide Corporation-Nuclear Division, operating contractor for the U.S. Department of Energy under U.S. Government Contract No. W-7405-eng-26.

2. Develop methodology for rapid, semi-quantitative, on-site detections of freon leaks in K-33 sight glasses, welds, valve stems, and transfer pumps. An existing General Electric halogen detector is being evaluated for this purpose. It has an estimated limit of detection of 1.7×10^{-6} oz/y; the upper quantitative limit is 17 oz/y.

3. Develop a technique for detecting a freon loss rate of 15 oz/y from cascade cooler systems. The Miran infrared, the G. E. halogen detector, and Fourier Transform infrared spectroscopy are techniques being evaluated.

New Requests:

1. Determine the concentration of asbestos fibers in air, in downwind plumes from cooling towers. R. D. Gilmore will coordinate sampling.

2. Provide stack gas sampling and constituent identification of exhaust gases from K-1200.

3. Provide a new stack gas sampling and analysis of K-1037 stack gases. J. S. McCall will coordinate sampling; J. G. Million will coordinate the IR, GC and GC/MS analyses.

4. Provide GC/MS analysis for detection of endrin, lindane, methoxychlor, toxaphene, 2,4,D and 2,4,5,TP (Silvex) in potable and raw waters. R. D. Gilmore will provide samples.

5. Determine the concentration of OF_2 in scrubber exhaust gases at K-402-9. The Miran 20m infrared analyzer will be employed for this project.

The next quarterly meeting is scheduled for July 11, 1978 at 1:00 p.m. in the K-1006 large conference room. A reminder notice will be sent in late June.

Joseph H. Stewart, Jr.

J. H. Stewart, Jr.

JHS:pte

File

INTERNAL CORRESPONDENCE

NUCLEAR DIVISION

POST OFFICE BOX P, OAK RIDGE, TENNESSEE 37830

To (Name) R. W. Levin
Division
Location

Date September 21, 1977

Originating Dept. Special Services

Answering letter date

Subject ~~September 20, 1977 Meeting~~ to Review Environmental Monitoring Progress

Copy to
L. J. Carpenter
M. S. Dill
R. B. Farrar
R. D. Gilmore
T. Kwasnoski
J. G. Million/F. N. Bensey, Jr.
J. H. Pashley
L. A. Smith
S. S. Stief/M. E. Mitchell
H. E. Trammell
C. W. Weber
J. C. White
File - NoRC

These environmental monitoring quarterly reviews were established to ensure concentrated effort, from many interested groups, in solving a list of 14 environmentally-related problems. Three new problems were added during the last few months, for a total of 17. At this time, 13 of these have been satisfactorily completed.

Those removed from the list at this review are:

1. Environmental sampling studies which have been taken in K-402-9 and K-1037.

2. Refrigerant losses from cascade operations and from K-1004L. The large-loss areas have been identified, engineering planning has begun, and a FY 1980 budget request for funding has been made.

3. Asbestos-in-water third quarter surface water profile samples have been received and analyzed. Individual analysis reports will be sent to Mitchell and Gilmore.

4. R. D. Gilmore reported on new EPA potable water influent limits.

5. The K-1037 dust sampling-analysis plan has been completed.

Prepared by Union Carbide Corporation-Nuclear Division, operating contractor for the U.S. Department of Energy under U.S. Government Contract No. W-7405-eng-26.

6. Recirculating water chromate-discharge studies and analyses have been completed. Combined efforts of operations, effluent management, engineering, development and laboratory personnel resulted in meeting the EPA discharge limit of <0.05 ppm Cr.

7. Continuous monitor concepts for F^- and pH in K-402-9 caustic were evaluated, a more cost-effective sampling and laboratory analysis support has been chosen.

8. The 3-Plant airborne fluoride study was completed.

Items continued from the previous list include:

1. A sensitive PCB analysis using the new K-25 gas chromatograph. The repaired instrument was received September 15.

2. A study of continuous air monitor methodologies.

3. Waiting for installation of Hi-Vol air samplers by Rust Engineering. There seems to be a problem in receiving priority for this installation.

New requests received include:

1. Analyses for part-per-billion concentration of Endrin, Lindane, methoxychlor, toxaphene, 2,4-D and 2,4,5T (Silvex).

2. Evaluation of gas chromatographic methods for determining fluorine during cell changeouts.

3. Evaluated methods for continuous determination of 5 ppm of UF_6 in purge gas stream.

Two project completion reports are needed:

1. R. D. Gilmore - the K-1037 dust sampling and analysis study on particle size distribution.

2. T. Kwasnoski - 3-Plant air-borne fluoride comparative program.

The next meeting is scheduled for December 13, 1977.

Joseph H. Stewart, Jr.

J. H. Stewart, Jr.

JHS:pte

File

INTERNAL CORRESPONDENCE

NUCLEAR DIVISION

POST OFFICE BOX P, OAK RIDGE, TENNESSEE 37830

To (Name) R. W. Levin
Division
Location K-1004-A

Date September 13, 1977

Originating Dept. Special Services

Answering letter date

Copy to

R. E. Barringer
T. W. Bartlett
F. N. Bensey, Jr.
C. L. Buskirk
L. J. Carpenter
R. B. Farrar
R. D. Gilmore
T. Kwasnoski
J. D. Lore
W. L. Maddox
J. S. McCall
J. G. Million
M. E. Mitchell
W. T. Mullins
J. H. Pashley
T. R. Oldham
L. A. Smith
S. S. Stief
H. E. Trammell
J. C. White
File - NoRC

Subject Meeting to Review Environmental Monitoring Progress

The next scheduled quarterly meeting for review of environmental monitoring progress at ORGDP is to be held on September 20, 1977 at 1:00 p.m., in the K-1006 small conference room.

Several of these problem areas have been "continued" for six months, or more. These include the Three-Plant air-borne fluoride comparison, a decision on refrigerant-loss profile studies, K-1200 stack and environmental sampling, and the PCB analysis by gas chromatography.

During this meeting, those who previously accepted responsibility for specific items discussed during the June 22, 1977 update meeting should be prepared to discuss their progress on the list of 17 items detailed in the meeting summary dated June 27, 1977.

Joseph H. Stewart, Jr

J. H. Stewart, Jr.

JHS:pte

Prepared by Union Carbide Corporation-Nuclear Division, operating contractor for the U.S. Department of Energy under U.S. Government Contract No. W-7405-eng-26.

INTERNAL CORRESPONDENCE

NUCLEAR DIVISION

POST OFFICE BOX P, OAK RIDGE, TENNESSEE. 37830

To (Name) / Division / Location

R. E. Barringer
T. W. Bartlett
C. L. Buskirk
L. J. Carpenter
R. B. Farrar
R. D. Gilmore
T. Kwasnoski
T. Lee
R. W. Levin
J. D. Lore
W. L. Maddox
J. S. McCall
J. G. Million
M. E. Mitchell
W. T. Mullins
J. H. Pashley
L. A. Smith
S. S. Stief
H. E. Trammell
C. W. Weber
J. C. White
File - NoRC

Copy to

Date: June 27, 1977

Originating Dept.: Special Services

Answering letter date:

Subject: June 22, 1977 Meeting for Review of Environmental Monitoring Progress

The meeting reviewed progress on the specific areas identified as requiring technical support in the original December 13, 1976, meeting. The status of those areas is summarized below:

(1) A more sensitive analysis for polychlorinated biphenyls (PCB): The new K-25 GC has been installed, standards prepared, and the Varian engineer has completed installation. J. G. Million will be prepared to analyze the stream waters and sediments from M. E. Mitchell on July 15, 1977.

(2) Radiochemical Analysis for transuranics: W. T. Mullins and M. E. Mitchell have agreed that the existing K-25 technology and detection limit of 5 picocuries/ℓ of water is adequate. This project is considered satisfactorily completed.

(3)/(4) Environmental sampling: The K-402-9 and K-1037 sampling are complete. The K-1200 area still has not been sampled by C. L. Buskirk and J. S. McCall. These samples are needed on a priority basis; we are committed to a report date of July 29, 1977.

(5) Refrigerant profile in K-1004-L: This project was extended to include a survey of the refrigerant losses from the entire area. G. P. Patterson (Operations Division) has computed losses from stores purchases, etc.; he found large losses around the process area sightglasses, and venting during purge cycling caused massive losses. The present Long Range 1980 budgeting is expected to reduce these losses.

M. E. Mitchell and R. D. Gilmore will determine relative toxicities of the various refrigerants, and locations using each, by July 15, 1977; schedule field-monitoring for each by August 1, 1977; and complete first survey by August 15, 1977, with the aid of R. E. Barringer.

(6) Asbestos in water: The second quarterly survey was completed on schedule by T. W. Bartlett. The third set will be submitted by M. E. Mitchell by July 29, 1977.

Prepared by Union Carbide Corporation-Nuclear Division, operating contractor for the U.S. Department of Energy under U.S. Government Contract No. W-7405-eng-26.

(7) EPA effluent discharge limits: R. D. Gilmore will report at the next meeting.

(8) Continuous air monitor: This appears feasible. Suggested methodologies and studies have been documented by J. D. Lore and J. H. Stewart, Jr. Studies are progressing.

(9) The K-25/Y-12/Tenn. BOD comparison: Complete and satisfactory.

(10) Three-Plant air-borne fluoride program: The "blank" solutions have apparent high fluoride content; efficiency percentages are not yet computed. Ted Kwasnoski will prepare data for a July 13, 1977, three-plant meeting.

(11) Evaluate Hi-Vol air samplers: Funding has been approved, work order written, awaiting installation by Rust Engineering.

(12)/(13) Completed

(14) Evaluate K-1037 dust problem: Sampling plan completed, R. D. Gilmore will initiate the program. The microanalytical studies (Stewart) for particle size distribution will be followed by chemical analysis by R. B. Farrar.

(15) Completed

(16) Recirculating water support: The K/TL-665 report on improvements in the RCW system is complete. The suggestions are being initiated by Operations Division personnel. The chromium removal problem is under intense study; the Y-12 Andco Cr^{+6}-to-Cr^{+3} unit will be tested on our RCW by June 30. A significant reduction in Cr^{+6} discharge has been effected; the EPA limits will not be met by July 1, however.

(17) Continuous F^- and pH monitor for caustic: Manufacturers literature received, vendors contacted. A Progress meeting (Barringer, Maddox, Lore and Steward) is scheduled for June 28.

No additional requests for assistance were received.

The next meeting is scheduled for September 20, 1977.

Joseph H. Stewart, Jr.

J. H. Stewart

JHS:pte

UNION CARBIDE

INTERNAL CORRESPONDENCE

NUCLEAR DIVISION

POST OFFICE BOX P, OAK RIDGE, TENNESSEE 37830

To (Name) R. W. Levin
Division
Location

Date November 29, 1976

Originating Dept. Chemical Analysis

Answering letter date

Subject Summary of October 11, 1976 Meeting for Review of Environmental Monitoring

Copy to R. B. Farrar
T. Kwasnoski
L. A. Smith
J. H. Stewart, Jr.
S. S. Stief
J. C. White
File - NoRC

ATTENDEES

In attendance at the subject meeting were: R. E. Barringer, C. L. Buskirk, T. Lee, J. D. Lore, W. L. Maddox, J. S. McCall, J. G. Million, M. E. Mitchell, J. H. Stewart, Jr., S. S. Stief, and C. W. Weber.

PURPOSE

1. To acquaint Chemical Analysis Department personnel with the development of environmental instrumentation for on-line effluent monitoring at the UCC Plant at South Charleston, W. Va. S. S. Stief and M. E. Mitchell recently visited that plant to be updated.

2. To discuss ORGDP effluent monitoring efforts and to define areas where additional Technical Services Division support can be of value in the ORGDP effluent control program.

DISCUSSION OF SOUTH CHARLESTON PLANT

1. The South Charleston Plant has a management team responsible for the development and operation of the on-line monitors for the plant.

2. That plant has purchased an instrumented mobile van, complete with PDP-8 computer, for controlling sampling, data reduction, and instrument calibration.

3. The S. Charleston Plant handles 14 million gal/day of waste water, and operates a miniature pilot-plant to monitor biological action and to assure that the waste water does not contain harmful pollutants.

4. Their plant requires two full-time instrument mechanics to support the on-line instruments.

Prepared by Union Carbide Corporation-Nuclear Division, operating contractor for the U.S. Department of Energy under U.S. Government Contract No. W-7405-eng-26.

5. The on-line total organic carbon (TOC) analyzer is an initial-warning instrument; when it indicates an organic effluent problem, a portable gas chromatograph is used to identify and quantitate the specific pollutant. Remedial action can then be taken by the appropriate area supervisors.

6. The Plastics & Chemicals Group of UCC (13 plants) has an annual budget of about $250,000,000 for pollution control, reflecting a large capital investment and operating cost.

ORGDP SUPPORT NEEDS

In addition to the current ORGDP environmental control support provided by the Technical Services Division, the following areas were specifically identified as needing attention:

1. A sensitive analysis for polychlorinated biphenyls (PCB) in water, soil, and sludge. (An operable gas chromatographic procedure is now available at Y-12, and will probably be established at ORGDP in December, 1976.) More sampling and analyses are needed.

2. Greater sensitivity in radiochemical analysis of environmental samples of vegetation, soil, and water. Of special interest are Ru, Cs, Tc, Np, and Pu. (This work will be coordinated by the Isotopic Services personnel who are acquainted with this need.)

3. A better profile analysis of K-1037 stack gases, to establish whether harmful vapors are being released to the atmosphere. (Gas chromatographic, infrared, and gas chromatograph-mass spectrometric analysis techniques will be applied here.) It was proposed that a committee representing several concerned divisions be set up to consider the K-1037 stack effluents.

4. A profile analysis of K-1200 area stack effluents, similar to (3) above.

5. A complete survey of the K-1004-L area to determine the refrigerant concentration profile.

(A survey IR instrument is available for this purpose in the Analytical Development Group.)

6. Establish the base-line information needed for monitoring for asbestos fibers in K-25 plant potable water and in streams.

(The Microanalysis Group has recently completed development of an analytical procedure for asbestos in the Paducah recirculating water systems, which should be applicable to this need.)

7. A review of recent or proposed EPA effluent discharge limits is needed, to ensure that analytical methods exist or can be established for the large number of organic and metallic materials to be monitored.

8. Continued development of a continuous monitor for low levels of organic pollutants in working environments. In some cases, ORGDP may be asked to provide the analytical technology needed by industry in some manufacturing operations.

9. Complete a comparison of ORGDP, Y-12, and State of Tennessee analyses for a range of analyses on liquid effluent samples from the three Oak Ridge plants. (This comparison is being completed. Additional attention is being given to the BOD analysis and several others.)

10. Complete the airborne fluoride sampling and analysis program, including the determination of sampling efficiency at the 1 ppb level.

11. Evaluate use of 8 new Hi-Vol air samplers to be put around the plant for uranium monitoring and perhaps fluoride.

12. Monitor the testing of the lime-treatment method for chromate reduction in the blowdown from the recirculating water system, and develop an on-line instrument to detect 0.05 ppm of hexavalent chromium.

13. Ascertain that methodology exists to meet the proposed new nickel analytical limit of 0.005 mg/m^3 in air.

14. Evaluate the K-1037 dust problem, by area sampling, and assist in determining bag filter efficiency.

15. New Sewage Plant instrumentation should be checked out by the Chemical Analysis Department.

FINAL COMMENT

C. W. Weber and S. S. Stief agreed that we should meet again as a group on December 13, 1976, to review progress and to discuss any additional plant needs in this support area.

C. W. Weber

CWW:pgc

INTERNAL CORRESPONDENCE

NUCLEAR DIVISION

POST OFFICE BOX P, OAK RIDGE, TENNESSEE 37830

To (Name) R. W. Levin

Division

Location

Date January 4, 1977

Originating Dept. Chemical Analysis

Answering letter date

Copy to

R. E. Barringer
C. L. Buskirk
R. B. Farrar
R. D. Gilmore
T. Kwasnoski
T. Lee
J. D. Lore
W. L. Maddox
J. S. McCall
J. G. Million
M. E. Mitchell
W. T. Mullins
J. H. Pashley
L. A. Smith
S. S. Stief
H. E. Trammell
J. C. White
File (2) - NoRC

Subject December 13, 1976, Meeting for Review of Environmental Monitoring Progress

The December 13, 1976, meeting for review of environmental monitoring progress at ORGDP was held on schedule. The initial meeting, on October 11, 1976, had revealed 15 areas specifically identified as needing analytical support beyond our regular support activities. At the December 13 *update* meeting, we discussed progress and status on each of the 15 items (identified in the following order in the letter of November 29, 1976, from C. W. Weber to R. W. Levin):

1. A sensitive analysis for polychlorinated biphenyls (PCB): The support immediately available at Y-12 is sufficient for the present low number of sample requests; these PCB analyses will be coordinated by the ORGDP Chemical Analysis Department. The ORGDP expects to have the gas chromatographic method operational by February 28, 1977, to support increased sampling associated with PCB usage at ORGDP.

2. Greater sensitivity in radiochemical analysis of transuranic elements: Two new zinc sulfide detectors (and associated instrumentation) have increased ORGDP sensitivity for Pu and Np by a factor of 60. The improved detection limits are comparable to those obtained by the ORNL methods and now meet the new ORGDP requirements.

3 & 4. A profile of K-1037 stack gases, and a profile of K-1200 stack gases: Some isolated samples have been taken and analyzed, but no coordinated effort has been initiated. A small working committee (T. Kwasnoski, C. L. Buskirk, R. D. Gilmore, M. E. Mitchell, and J. H. Stewart, Jr.) will coordinate all effluent stack gas sampling for the several programs involved, to avoid duplication of efforts. Systematic sampling is expected to begin early in January, 1977.

Prepared by Union Carbide Corporation-Nuclear Division, operating contractor for the U.S. Department of Energy under U.S. Government Contract No. W-7405-eng-26.

M. E. Mitchell will investigate possible use of the UCC (South Charleston) instrumented mobile laboratory at ORGDP, for stack gas monitoring.

5. A refrigerant profile in K-1004-L: An infrared portable monitor has been used to provide a preliminary survey. M. E. Mitchell and R. L. Ritter will designate the total area to be surveyed; then R. E. Barringer and H. A. Wayman will provide the in-depth infrared survey. The refrigerant profile should be completed by January 30, 1977. The survey will monitor specific pilot plant operations in an attempt to identify the sources of the losses (such as during purging).

6. Analysis of ORGDP potable water and Clinch River water for asbestos fiber content: These samples have been analyzed by transmission electron microscopy, and reported to M. E. Mitchell. A routine ORGDP asbestos-in-water analysis support capability now exists.

7. Review the proposed EPA effluent discharge limits; ensure that adequate analytical methods exist: J. G. Million will obtain, from R. D. Gilmore, a list of compounds which should be determined in ORGDP potable water. Of special interest are chlorinated organics and pesticides; the Chemical Analysis Department will then coordinate sample analysis with the appropriate ORNL organizations, which are currently staffed and equipped to provide these special analyses as a routine service.

8. Develop a continuous air monitor for special organic pollutants: Progress has been made and three candidate methodologies have been identified. Proposals for contract studies have been received and are being evaluated. This is a long-term project.

9. Compare ORGDP/Y-12/State of Tennessee analyses of replicate liquid effluent samples: This has been completed. The ORGDP/Tenn. BOD analyses were in agreement in the special sampling program. The Y-12 method has been modified, and Y-12 analytical values for BOD now agree with those of ORGDP. A meeting was expected prior to December 30 (between ERDA, State of Tenn., and one UCND representative) to discuss liquid effluent analyses generated by ORGDP, Y-12, and the State of Tenn. in the recent sampling program.

10. Complete the study of airborne fluoride sampling and analysis: T. Kwasnoski will coordinate a 3-plant program designed to establish the sampling efficiency and precision of treated filter papers at the 1-ppb fluoride level at each site.

11. Evaluate Hi-Vol air filter samplers: The primary function of these samplers is to monitor uranium released to the atmosphere from plant operations. Use of these same filters for fluoride monitoring, by treating the paper, is not considered adequately efficient, due to the high velocity of the air through the paper.

    The Hi-Vol units have not yet been deployed and are awaiting Rust Engineering installation. M. E. Mitchell will coordinate installation with Rust.

12. Monitor chromate reduction in RCW system: M. E. Mitchell does not currently require an on-line analyzer for hexavalent chromium; this analytical development will be removed from the list of projects to be completed.

13. Methodology for determining 0.005 mg/m^3 of nickel in air: R. B. Farrar reported that the existing atomic absorption method will meet this requirement.

14. Evaluate K-1037 dust problem: Sampling is now in progress; more sampling will be required.

15. Evaluate new Sewage Plant instrumentation: Existing field instruments are operated and maintained by plant personnel for M. E. Mitchell; no Chemical Analysis Department support is required presently. Also, no new instrumentation is projected at this time.

16. A new request was submitted by M. E. Mitchell at the close of the meeting. He proposed evaluation of several different commercial systems for removal of chromium and sulfate from RCW systems. (Sulfate removal is needed only with the proposed lime treatment to prevent $CaSO_4$ precipitation. It may not be needed for some other treatment.) Since this request may involve Gaseous Diffusion Development Division laboratory and pilot plant-scale evaluations, M. E. Mitchell will request support from that division. The Chemical Analysis Department will provide chromium and/or sulfate analyses which may be necessary to conduct this project.

FINAL COMMENTS:

The progress *boxscore* is encouraging. We have completed six projects, and have made significant progress on six additional projects, from the original list of 15. Two of the remaining three projects can be deleted as presently unnecessary.

The next meeting is scheduled for 10:00 a.m. on Monday, March 14, 1977, to review progress and to discuss any additional plant needs in this support area.

Joseph H. Stewart, Jr

J. H. Stewart, Jr.

C W Weber

C. W. Weber

JHS:CWW:pgc

File Env. Monitoring

INTERNAL CORRESPONDENCE

NUCLEAR DIVISION

POST OFFICE BOX P, OAK RIDGE, TENNESSEE 37830

To (Name	R. E. Barringer	J. S. McCall	Date	March 29, 1977
Location	T. W. Bartlett	J. G. Million		
	C. L. Buskirk	M. E. Mitchell	Originating Dept.	Special Services
	L. J. Carpenter	W. T. Mullins		
	R. B. Farrar	J. H. Pashley	Answering letter date	
	R. D. Gilmore	L. A. Smith		
Location	T. Kwasnoski	S. S. Stief	Subject	March 21, 1976 Meeting for Review of Environmental Monitoring Progress
	T. Lee	H. E. Trammell		
	R. W. Levin	C. W. Weber		
	J. D. Lore	J. C. White		
	W. L. Maddox	File, NoRC		

The March 21, 1977, meeting reviewed environmental monitoring progress on the 16 specific areas which were identified as needing analytical support in the December 13, 1976 review meeting. The status of each area is summarized below:

1. A sensitive analysis for polychlorinated biphenyls (PCB): The expected ORGDP need for determining background levels of PCB will require a significant sampling program for soil and for air. J. G. Million is responsible for establishing the gas chromatographic method by June 15, 1977.

2. Radiochemical analysis for transuranics: The new detectors have been installed, but unexpected radionuclide contamination interferes with the analysis. M. E. Mitchell will consult directly with W. T. Mullins and determine the need for further improvement in methodology.

3/4. Environmental sampling: C. L. Buskirk and J. S. McCall are requested to assign high priority to stack-gas sampling in K-1200, K-402-9, and K-1037. These need to be taken prior to March 31, 1977, since the ORNL analytical instrument will not be available for ORGDP support after about April 4, 1977. J. G. Million will confer with Roy Snyder and ensure that gas flows, volumes, and temperatures are available for correlation with the samples taken.

5. Refrigerant profile in K-1004-L: This action has been extended to also include process areas, at the request of M. E. Mitchell. The revised schedule is: The ambient K-1004-L refrigerant profile will be completed by R. E. Barringer and R. D. Gilmore by April 21, 1977. Prior to April 15, 1977, M. E. Mitchell will establish stacks to be sampled in operations areas. The sampling ports and flow meters will be installed by May 15. The analysis profiles, by infrared, will be accomplished by Barringer and Mitchell by June 1, 1977.

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6. Asbestos in water: A second survey for asbestos in groundwater in the ORGDP area found 3 million fibers per liter in one Poplar Creek sample. The other specimens were below the detection limit of the method. M. E. Mitchell will perform an extensive sampling program in August, 1977, to obtain baseline data prior to installation of synthetic tower fill material in a new cooling tower.

7. EPA effluent discharge limits: R. D. Gilmore will report on status of ORGDP water quality monitoring program at the next quarterly meeting. He is preparing an SPP on water sampling and analysis.

8. Development of continuous air monitor: It is progressing. R. D. Gilmore will obtain physical properties of compounds of interest.

9. Comparison of ORGDP/Y-12/State BOD analysis comparison: The ERDA meeting was held to discuss the comparisons. The ORGDP analyses are in good agreement; this project is now completed.

10. Three-plant airborne fluoride sampling and analysis: Determination of filter efficiency at the 1-ppb level has not been completed. T. Kwasnoski is coordinating this program.

11. Evaluate Hi-Vol air filter samplers: A $19,000-funding deficiency is preventing installation of the 8 units, which were purchased and are now in storage.

12. Completed.

13. Completed.

14. Evaluate K-1037 dust problem: R. D. Gilmore, J. S. McCall and R. B. Farrar will establish a method for determining the actual sampling efficiency of the existing methodology. They will report at the next quarterly meeting.

15. Completed.

16. Recirculating water support: This request has been significantly enlarged. W. L. Maddox and F. W. Postma are providing support on both water chemistry and in chromium recycle and/or removal. An interim report, on suggested improvements in the RCW system, is expected by March 31, 1977.

17. A new request was submitted by R. D. Gilmore, M. E. Mitchell, and independently by R. L. Farrar of the Gaseous Diffusion Development Division. The K-402-9 scrubber solution needs both a continuous pH monitor (8-14 range) and a continuous F^- ion monitor.

The next meeting is scheduled for 10:00 AM on Monday, June 20, 1977, to review progress and discuss new plant needs.

J. H. Stewart, Jr.

JHS:emck